All you need is love

Pass, Jessica A.; Lindenberg, Siegwart M.; Park, Justin H.; McClintock, Charles G; Liebrand, Wim B.G.

Published in:
European Journal of Social Psychology

DOI:
10.1002/ejsp.619

European Journal of Personality, Vol. 2, 217–230 (1988)

The ring measure of social values: a computerized procedure for assessing individual differences in information processing and social value orientation

WIM B. G. LIEBRAND
University of Groningen, The Netherlands

CHARLES G. McCLINTOCK
University of California, Santa Barbara, U.S.A.

Abstract

Personality can be defined from a social standpoint as a more or less consistent system of orientations that influences an individual's decisions and behaviors regarding the allocation of resources to self and others. One of the more robust models for the measurement of an individual's interpersonal utilities is McClintock's social value approach (McClintock, 1972). In the present study, we evaluate the construct of social value by testing the hypothesis that the cognitive processing time of subjects should vary systematically as a function of the type of social value being expressed. Towards this end, the Ring Measure of Social Values (Liebrand, 1984) was administered to 61 male and 124 female subjects. As predicted, cooperators and competitors were observed to have longer response latencies than altruists and individualists. In addition, a Social Value by Outcome Structure interaction was observed, and explained by assuming that cooperators are more hesitant in making decisions involving negative outcomes for others, whereas competitors are more reluctant to assign positive outcomes to others. These research findings add further evidence regarding the validity to the construct of social value.

INTRODUCTION

Within a decisional framework, personality may be defined as a system of personal and interpersonal orientations that play an important role in influencing an individual's decisions and behaviors in regard to self, to others and to the physical environment. Such orientations are largely shaped through time by the reciprocal attempts by individuals and their significant others to exercise influence over each

Requests for reprints should be sent to Wim B.G. Liebrand, Department of Psychology, University of Groningen, Grote Markt 31–32, 9712 HV Groningen, The Netherlands.

0890–2070/88/030217–14$07.00

Received 1 April 1987

other's behaviors so as to control commonly valued resources. That is, an individual's personality is strongly conditioned by the relationships of outcome interdependence that effectively define their social existence. Such interdependence, in combination with an individual's personal orientations, plays a major role in the decisions they make.

It could be argued, of course, that the above definition of personality applies primarily to the more social, dynamic, and changeable aspects of behavior as, for example, an individual's being more or less cooperative in orientation towards particular others across a very limited subset of settings. One can indeed argue that there are more stable aspects of personality that are either biological givens, or reflect relatively fixed patterns of response made across a wide range of environments.

But even these more stable biologically determined dispositions may in the long term reflect social decisions concerning mate selection in prior generations. Further, much of the contemporary environment, which appears relatively fixed, is in fact man-made, and given decisions to do so, subject to rapid modification. One gets a sense of the circularity of the process when one recognizes that social decisions can modify the species' biology and their environment, that such decisions further help to shape those personal and interpersonal orientations that we define as personality, and finally, that these orientations in turn play a major role in determining the organism's future decision making.

Within empirical psychology, the strongest formal representation of social decision making can be found in the conceptual and empirical study of experimental games. Traditional game theoretical models initially postulated that 'of two alternatives which give rise to outcomes, a player will choose the one which yields the more preferred outcome, or, more precisely, in terms of the utility function he will attempt to maximize expected utility' (Luce and Raiffa, 1957, p. 50).

The preceding postulate, known as the assumption of rational behavior, has historically often been misunderstood (Colman, 1982). The misunderstanding arises because the outcomes depicted for an individual in a game matrix cannot always be equated with the utilities for self that an individual perceives to attend his or her various choice options. This obtains because an individual's utilities in an interdependent decision making task, such as a game, is not necessarily defined by the utility of the outcomes available to self. Frequently, they are mutually determined by the outcomes one's decisions afford self as well as some other. That is, the utility of a choice to a decision maker not only reflects the value of the outcomes accruing to oneself, but those that accrue to others. And hence, utility functions often are fundamentally social in nature.

Several procedures for measuring individual preferences or utility functions that take into account the weights actors assign to both their own and other's outcomes have been proposed (Hofstee, 1970; McClintock, 1972; Messick and Sentis, 1985; Knight and Dubro, 1984; Radzicki, 1976; Schulz and May, 1987). One of the more robust approaches is the social value model (McClintock, 1972, 1978) in which values are defined as a simple linear combination of outcomes to self and outcomes to the other person. An individual's utility function is thus defined as:

$$U = w_1 \text{ (Outcomes for self)} + w_2 \text{ (Outcomes for other)}$$

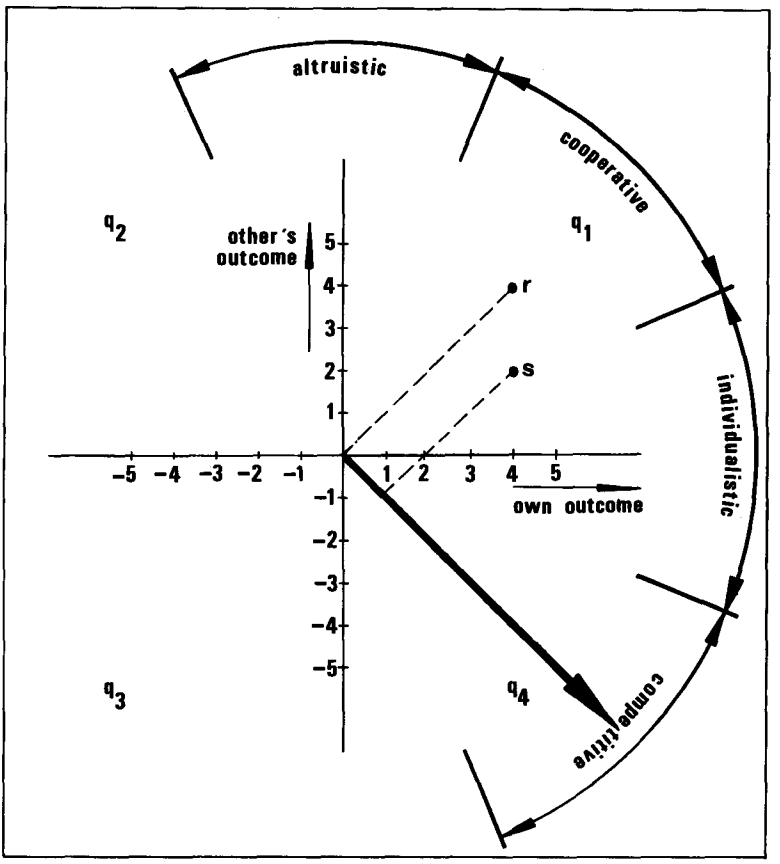

Figure 1. Own other outcome plane and four classes of dominant social values, q1 thru q4, Quadrant 1 thru Quadrant 4, respectively. For competitors Outcome s is preferred to Outcome r because it has the larger projection on their value vector

Depending upon the weights w_1 and w_2, an infinite number of utility functions can be constructed. Usually, eight functions are distinguished (see Figure 1), only four of which have been identified as utility functions that underlie the choice behavior of a significant proportion of subjects in interdependent decision tasks (Kuhlman and Marshello, 1975; Liebrand and Van Run, 1985). These utility functions include the social values of 'altruism', 'cooperation', 'individualism', and 'competition'. Altruism ($w_1 = 0$, $w_2 = 1$) implies a value of maximizing other's outcomes; cooperation ($w_1 = 1$, $w_2 = -1$) maximizing joint outcomes; individualism ($w_1 = 1$, $w_2 = 0$) maximizing own outcomes; and competition ($w_1 = 1$, $w_2 = 1$) maximizing relative advantage.

As noted before, there are some approaches that suggest an even finer discrimination of social values (Knight and Dubro, 1984; MacCrimmon and Messick, 1976; Radzicki, 1976). These approaches also include as values non-linear combinations of subject's preferences for own and other's outcomes. In the present study, however, we will focus upon the simpler set of four social values defined above, namely, those of *altruism, cooperation, individualism* and *competition*.

Prior empirical work on social values has established, in a variety of countries, that a substantial proportion of the subjects do indeed systematically assign different weights to own and other's outcomes in a manner consistent with the previous four value orientations (McClintock and Liebrand, in press). There is also evidence that the expression of a particular social value remains relatively stable over time (Kuhlman, Camac and Cunha, 1986; McClintock and Allison, 1986). In addition, it has been observed that measures of social value demonstrate both predictive and convergent validity (Kuhlman and Marshello, 1975; Hessing and Elffers, 1987; Kramer, McClintock and Messick, 1986; Liebrand, 1984; Liebrand and Van Run, 1985).

To date, research on social values has focused principally upon developing differing measures of value orientations, and assessing the impact that such values, in interaction with other variables, have upon an individual's choice behavior in one or more types of matrix games, or other types of interdependence tasks. Exceptions to using choice behavior as the principal dependent variable can be found in studies by Bem and Lord (1979), and Liebrand, Jansen, Rijken and Suhre (1986). Bem and Lord reported that the choice behavior of University students with different social values generalized outside the laboratory to interpersonal behaviors, as reported by the students' roommates. Liebrand *et al.* (1986) found that the social value orientation of actors interacted with the choice behaviors of others to influence the actors' judgements of the 'goodness' and 'potency' of others' social behaviors.

In the present study, prior research on the predictive validity of the social value construct is extended to include the prediction of processes or events other than individuals' overt decisions or choice behaviors. Specifically, we make predictions regarding the temporal aspects of those decisional processes that may be assumed to underlie cooperative, competitive, individualistic and altruistic choice behavior. More specifically, we test the hypothesis that if the algebraic processes underlying the expression of each of the above social values requires numerical computations of differing complexity, then the cognitive processing times of subjects, that is, their response latencies should vary systematically as a function of the value orientations that they express.

SOCIAL VALUES AND INTERINDIVIDUAL DIFFERENCES IN INFORMATION PROCESSING

Within personality psychology, the measurement of response latencies as a way of assessing individual differences in information processing has evoked relatively little attention. Exceptions are studies in which the information processing consequences of self-schemas about gender are examined (Bem, 1981; Markus, Crane, Bernstein and Siladi, 1982), and studies on the storage and retrieval processes of personality traits in semantic memory (Ebbesen and Allen, 1979; Harris and Hampson, 1980). In the latter studies the authors predicted and found that the more confident persons are about a trait rating, the faster are their retrieval times.

In a social setting, the simplest instance of decision making by definition involves choosing between two alternatives with at least two values attached to each, one

defining an outcome accruing to self, the other an outcome that another individual will receive. This decision process, according to Klahr and Wallace (1976), includes (a) weighting the two outcomes associated with a given alternative in terms of an individual's utility function; (b) performing, if required, the necessary arithmetic transformation, such as adding own and other's outcomes, to reach an overall outcome value for each alternative; and, finally (c) choosing that alternative with the highest utility.

The four value orientations that are assumed to underlie subjects' choice behaviors in the present research, and their requisite arithmetic transformations are set forth in Table 1.

Table 1. Choice rule and arithmetic operations that define four major social values: a and b are alternative own outcomes; c and d are alternative other's outcomes

Social value	Choice rule	Arithmetic transformation
Individualism	Maximizing own outcomes regardless of other's; maximizing own gain	$a + 0^* > b + 0$
Competition	Maximizing the difference between own and other's outcomes; maximizing relative gain	$a - c > b - d$
Cooperation	Maximizing own plus other's outcomes; maximizing joint gain	$a + c > b + d$
Altruism	Maximizing other's outcomes regardless of own	$c + 0^{**} > d + 0^{**}$

*Implies actor assigns zero weight to other's outcomes (c & d)
**Implies actors assigns zero weight to own outcomes (a & b)

Considering the four social choice rules defined in this Table, one would expect that information processing time required to make a choice, given Klahr and Wallace's (1976) three step selection process, would be less where zero utility was assigned to own (altruism) or other's (individualism) outcomes. This implies, in effect, that subjects who attempt either to maximize their own or to maximize other's outcomes should have faster choice times than those who seek to maximize joint (cooperation) or relative (competition) gain outcomes.

On a more detailed level, differential predictions can be made between subjects pursuing the more complex rules of cooperation vs. competition. One might expect that the response times of those pursuing a cooperative strategy would be somewhat shorter. This seems likely for strictly arithmetic reasons. To add two sets of two numbers, that is, numbers representing own and other's outcomes, and to compare the resulting sums to determine which is the larger would seem a simpler operation than to subtract two sets of own and other's outcomes from one another, and then to discern which is the larger of the remainders.

As regards the expected differences in response times in the use of simple and more complex allocation rules, some prior empirical evidence exists in earlier research by Chao, Knight and Dubro (1986). These researchers asked subjects to identify which of two self/other outcome distributions would be optimal for maximizing a simple decision (i.e., individualism) or a more complex one (i.e., equality). They observed that subjects indeed took longer to identify the more

complex than the simpler decision rules. These observed differences in processing time, however, do not necessarily generalize to situations such as the present one in which subjects have to decide themselves as to what strategies to pursue. It is possible that due to prior learning, no differences will be observed in processing time for simple versus complex utility functions when individuals are acting in accord with their own dominant strategy.

THE STRUCTURE OF OWN/OTHER OUTCOME INFORMATION AND PROCESSING TIME

In formulating expectations regarding variations in information processing time across subjects as a function of the structure of a task, it is, of course, requisite first to describe the nature of the task. In the present study, the Ring Measure of Social Values was used as the social decision task. This measure was developed as a systematic way to estimate the weights that subjects assign to their own and other's outcomes in making decisions.

Subjects are provided with two alternative distributions of positive and/or negative outcomes for self and for some unknown other person. All distributions are sampled from a circle in the own/other outcome plane as depicted in Figure 2.

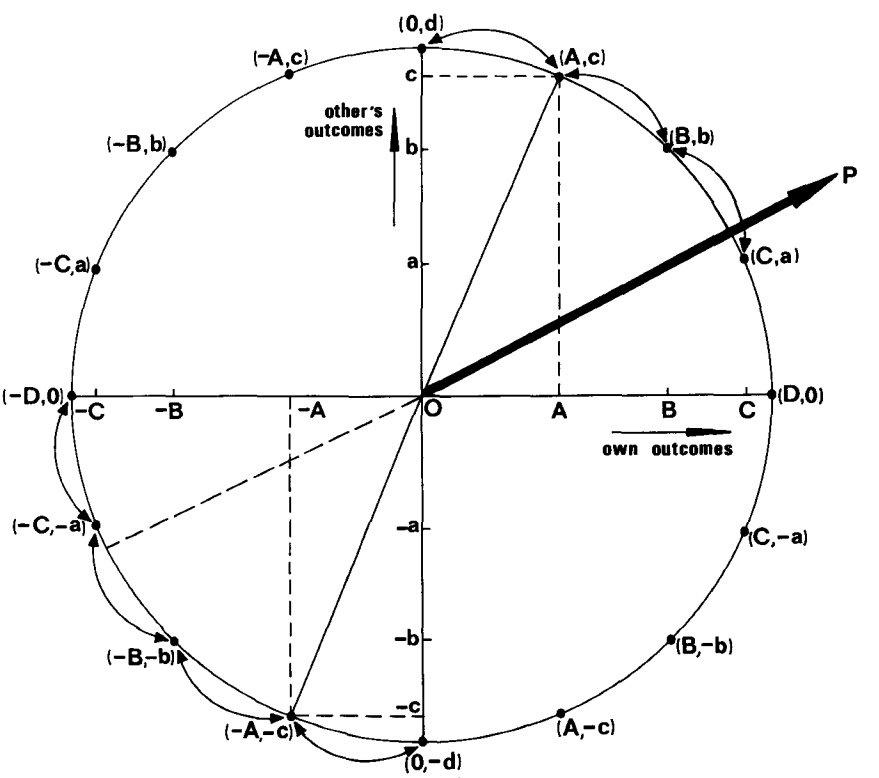

Figure 2. The Ring Measure of Social Values (after Liebrand, 1984)

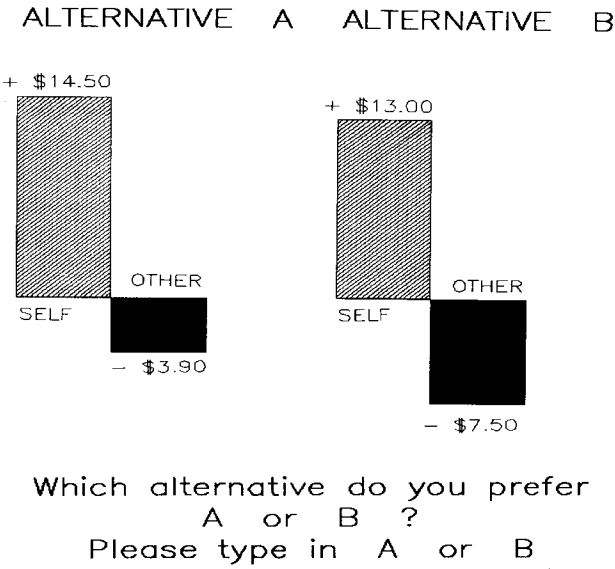

Figure 3. Example of one item of the computerized version of the ring measure

These distributions are represented as two sets of bars on the screen of a personal computer. The bars are color-coded to reflect whether own and/or other's outcomes are positive (green) or negative (red). The subject's task is to choose between two own/other outcome distributions which fall adjacent to each other on the circle, and within or on the boundary of one of the four quadrants. Choices are presented in a random order. An example of a specific choice task is presented in Figure 3.

Given the structure of the present task, there exists a set of expectations that one can make regarding the influence that the task and the characteristics of the decision maker will have upon the latters choices and responses latencies. First, it seems likely that more information processing time will be required in the case where both pairs of own/other outcomes contains a negative outcome for self than in the case where there are positive outcomes for self. There would seem to be at least two reasons why this might obtain.

First, individuals are probably more hesitant in making decisions in which they have to choose which is the least punishing of two negative outcomes to self than when deciding which is the most rewarding of two positive outcomes. Second, it seems likely that comparing and deciding between two negative outcomes to self will require greater computational time than deciding between two positive ones. The latter seems likely to obtain regardless of the dominant value orientation of the subject, be it altruism, cooperation, individualism, or competition. Both of these expectations imply that the subjects' decision or reaction times in Quadrants 3 and 4 (Figure 2) will be longer than the reaction times in Quadrants 1 and 2.

With regard to the time required to make decisions between two positive versus two negative outcomes for other, there also would seem to be several possibilities. First, it may be that just as with outcomes for self, subjects respond more slowly when they are forced to choose between assigning unpleasant negative outcomes to

other, again because of either a social concern for other, or because of the increased computational skills required. Or conversely, one might assume they have a less favorable orientation towards other, and hence expect that it will take longer for individuals to make decisions choosing between outcomes that afford other positive rather than negative outcomes.

The preceding two possibilities lead to both a 'pro' and an 'anti-social' hypothesis. Assuming a longer processing time when deciding between negative outcomes for self, the pro-social hypothesis predicts that across subjects the longest reaction times will occur in Quadrant 3 where both self and other's outcomes are negative, and the fastest reaction times will occur in Quadrant 1 where outcomes to self and other are positive. On the other hand, the anti-social hypothesis predicts that the longest reaction times will occur in Quadrant 4 where the outcomes to self are negative and those to other are positive, whereas the fastest times will be observed in Quadrant 2 where the outcome are positive to self and negative to other.

The above predictions are formulated in terms of main effects across subjects. It is, of course, possible that the social value orientations of subjects would interact with the outcome quadrants from which own and other outcomes are sampled to influence decision time. For example, competitors might have shorter reaction times with negative outcomes for others than cooperators while cooperators might have shorter reaction times for positive other outcomes than competitors, etc. However, given the complete lack of prior research findings in this area, together with the existence of various alternative explanations for any interaction effect, this part of the study was considered to be particularly exploratory, and no specific predictions were made.

METHOD

Subjects

Subjects were 61 male and 124 female undergraduate students from the University of California, Santa Barbara, who participated in order to fulfill course requirements.

Procedure

Subjects were seated behind an IBM computer in one of eight separate cubicles situated around a hallway. They were initially informed that: (1) the study was concerned with decision making; (2) they would complete a series of computer controlled tasks; (3) the instructions for each task would appear on the computer screen; and (4) they could interrupt any task at anytime to ask the experimenter for assistance. The present study deals only with the first of several tasks completed by the subject, that is, the Ring Measure of Social Values.

The Ring Measure of Social Values provided subjects with two alternative distributions of positive and/or negative outcomes for self and for other. Formally, each choice situation constitutes one Decomposed Game (Messick and McClintock, 1968). In the instructions, the structure of the decision task, and the procedures for interacting with the computer were explained by means of example.

No suggestion was given regarding what self/other allocation rule might be used to select between the various pairs of outcomes. Subjects were also told that the other person to whom they were affording outcomes, and who would afford outcomes to them, was a randomly chosen other whose actual choices they would never see. This instruction was provided so that subjects' choices would be indicative of their preferences for own/other outcome distributions, and could not reflect either strategic moves made by subjects to encourage other to choose differently, or specific subject reactions to other's choice behavior.

The decomposed games measure, as employed in the Ring Measure, is described in more detail in Liebrand (1984). In the present computerized version, subjects make 24 choices between two own/other outcome combinations. The ordering of the choices is randomized separately for each subject. The 24 pairs of outcomes are sampled from a circle contained within an own/other outcome plane containing outcomes to self on the horizontal axis, and outcomes to other on the vertical axis. Specific own/other outcomes are defined as points in this two dimensional plane.

The center of the circle coincides with the origin of the plane. In the present instance, the origin denoted \$.00 for self and \$.00 for other. The radius of the circle was \$15.00. Each pair consisted of two sampled own/other outcome combinations that were adjacent to each other. An example of such a pair of own/other outcomes was the choice between either A: \$14.50 for me, and −\$3.90 for other, or B: \$13.00 for me and −\$7.00 for other. For each of the 24 pairs of outcomes, subjects were instructed to choose the outcome distribution they most preferred.

Adding up the chosen amounts separately for self and for other provides an estimate of the weights assigned by the subject to own and other's payoffs. These weights are used to estimate the slope of subject's value vector extending from the origin of the own/other outcome plane. All value vectors between 112.5 and 67.5 (North = 90; East = 0 degrees) were classified as altruistic; those between 67.5 and 22.5 degrees were classified as cooperative; those between 22.5 and 337.5 degrees as individualistic, and vectors between 337.5 and 292.5 degrees as competitive.

Subjects were classified only if the length of their vector exceeded one-fourth of the maximum length of a value vector. The length of a value vector provides an index of the consistency of subject's choices in this linear choice model. The maximum vector length is twice the radius of the circle, and random choices result in an expected vector length of zero. The observed mean length was 76% of the maximum vector length (SD = 23%). The data of six subjects were not included because their vector lengths were less than the minimum prescribed. Another four subjects had value vectors not in the range defined by the present four classes of value orientations. The final subject sample consisted of 175 subjects, of whom three could be classified as Altruists, 51 as Cooperators, 78 as Individualists, and 43 as Competitors.

RESULTS AND DISCUSSION

Throughout this section we will report log transformed reaction times. Across subjects and across the 24 Decomposed Games the mean of logs is 2.36. For the four classes of social values the log means are 2.05, 2.45, 2.26 and 2.43 for Altruists, Individualists, Cooperators and Competitors respectively. The hypothesis that

Altruists and Individualists would take less time than Cooperators and Competitors was strongly supported (M(Alt+Ind) = 2.25; M(Coop+Comp) = 2.44, $t(173) = 3.54$, $p < .001$). The expectation that cooperators would take longer to decide than competitors was not supported ($t(92) = .34$, n.s.).

It was our expectation that cooperators and competitors would have longer decision times because they would have to weigh the relative importance of two components, self and other, instead of only one, self or other. An alternative interpretation, of course, is that cooperators and competitors are more inefficient decision makers than individualists and altruists. Considerations of parsimony, however, would lead one to accept the prior explanation. And hence,we conclude that the present findings are clearly consistent with expectations concerning the cognitive processes required to perform the various value transformations. In effect, the results provide strong and additional evidence for the validity of the social value construct.

Next, for choices falling in each quadrant, log transformed reaction times were computed. These four scores served as repeated measures in an analysis of variance with social value (4 levels) as the between-subjects factor. In addition to the significant effect for Social Value ($F(3,171) = 4.56$, $p < .005$), a large multivariate effect for Quadrant ($F(3,169) = 35.56$, $p < .0001$), and a significant Quadrant by Social Value interaction ($F(9,503) = 3.81$, $p < .0002$) were observed.

Univariate analyses revealed that the effect for quadrant was mainly due to the effect for the linear polynomial $F(1,171) = 96.89$, $p < .0001$). It appeared that the log means increased from Quadrant 1 (self pos; other pos; $M = 2.26$) and Quadrant 2 (self pos; other neg; $M = 2.34$) and Quadrant 3 (self neg; other neg; $M = 2.35$) to Quadrant 4 (self neg; other pos; $M = 2.48$). The present findings are not consistent with the 'pro' or 'anti-social' hypotheses. The 'pro-social' hypothesis incorrectly predicted the longest reaction times for Quadrant 3, while the 'anti-social' hypothesis incorrectly predicted the fastest reaction times for Quadrant 2. Obviously, the observed pattern of reaction times between the four quadrants cannot be explained in terms of the two simple main effects that we predicted would obtain.

One possible interpretation for the observed pattern of differences in subjects' choice times within the four quadrants has been suggested by Van Oudenhoven (personal communication, November 21, 1986). He observed that in social decision making, two different mechanisms may be operative. First, as our most important determination, we consider our own outcomes and check to see whether they are positive or negative. And next, we evaluate the equity of the different outcome alternatives, where equity is defined by correspondence in outcome signs between own and other's outcomes, '+,+' or '−,−', and inequity by noncorrespondence, '−,+' or '+,−'. It is assumed that the evaluation of negative outcomes to self is carried out more slowly than the evaluation of positive outcomes to self. Next, it is assumed that information is processed more rapidly when pairs of outcomes are equitable rather than inequitable.

Given these assumptions, it would be expected that the fastest reaction times would occur in Quadrant 1 where there are positive outcomes for self, and the relationship between own and other's outcomes is equitable in terms of their sign. Quadrant 2 would require more decision time because of the inequity of outcomes. Quadrants 3 and 4 would take even more time because of the dominant role of our

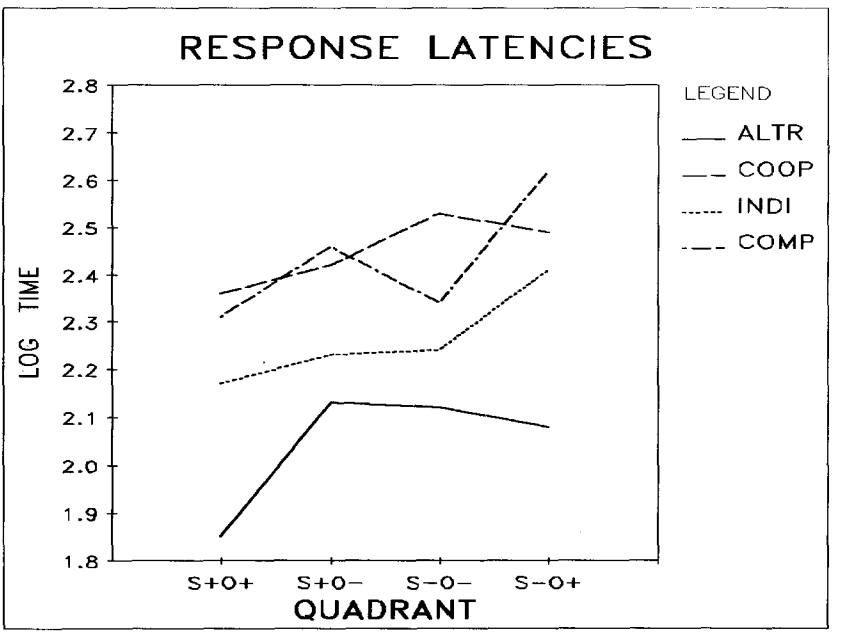

Figure 4. Response latencies of social values for each quadrant, quadrant 1: S + O +; quadrant 2: S + O −; quadrant 3: S − O −; quadrant 4: S − O +

own (negative) outcomes. Finally, the inequity in Quadrant 4 designates that quadrant as the one in which the longest reaction times are to be expected. Obviously, the explanation is completely *post-hoc*, but it does account for the pattern of differences observed between the quadrants across subjects. The explanation, however, is not consistent with the observed Social Value by Quadrant interaction.

The significant Social Value by Quadrant interaction is shown in Figure 4. This interaction is attributable primarily to the reaction time scores for cooperators and competitors in Quadrant 3 and in Quadrant 4. This cross-over interaction is consistent with expectations that would follow from the 'pro-social' and 'anti-social' hypotheses described previously. If one assumes quite reasonably that subjects with a cooperative orientation are more likely to make choices consistent with the 'pro-social' hypothesis, and competitive oriented subjects with the 'anti-social' hypothesis, then one would expect to observe that cooperators would display the slowest choice times in Quadrant 3, and competitors in Quadrant 4. These findings would further support our contention that a knowledge of individuals' social value orientations can help one to predict and to understand their decisions in social tasks where their choice behaviors influence both their own and others' outcomes.

CONCLUDING REMARKS

The present study extends prior research findings on the validity of the social value construct in that it provides evidence that interindividual differences in information

processing can be at least in part understood to be a function of the social value orientations of the decision makers. Although only one experiment is described here, we were able to replicate the research findings, without exception, by analyzing value and reaction time data collected in a prior study. This does reduce the need for further research that would replicate and extend the present study. As generally obtains, the present study raises more research questions than it resolves. For example, it would be very important to assess the response times of the subjects who are instructed to make choices consistent with particular value orientations, and to determine whether and how these choice times vary as a function of their own dominant value orientation.

Further, one could extend the present type of research into other domains than those of cognitive processing. For example, it would be interesting to observe whether the types of decisions that subjects must make in terms of affording positive and negative outcomes to self and other correlate with affective responses at the physiological level, such as in variations in blood pressure or heart rate. In summary, it seems clear that the study of response times in decision making will in the future help us to understand the cognitive, affective and other processes underlying individual differences in social decision making.

REFERENCES

Bem, S. L. (1981). 'Gender schema theory: A cognitive account of sex typing', *Psychological Review*, **88:** 354–364.

Bem, D. J. and Lord, G. C. (1979). 'Template matching: A proposal for probing the ecological validity of experimental settings in social psychology', *Journal of Personality and Social Psychology*, **37:** 833–846.

Chao, C. Ch., Knight, G. P. and Dubro, A. F. (1986). 'Information processing and age differences in social decision-making', *Developmental Psychology*, **22:** 500–508.

Colman, A. (1982). *Game Theory and Experimental Games*, Pergamon Press, Oxford.

Ebbesen, E. B. and Allen, R. B. (1979). 'Cognitive processes in implicit personality trait inferences', *Journal of Personality and Social Psychology*, **37:** 471–488.

Harris, P. L. and Hampson, S. E. (1980). 'Processing information within implicit personality theory', *British Journal of Social and Clinical Psychology*, **19:** 235–242.

Hessing, D. J. and Elffers, H. (1987). 'Sociale dilemma's: De psychologie van de belastingontduiking en het tekort aan donororganen [Social dilemmas: The psychology of tax evasion and the shortage of donor organs]. *Recht der Werkelijkheid*, **8:** 7–29.

Hofstee, W. K. B. (1970). *Spelletjes voor twee: Een alchemie van tussen-menselijke relaties* [Games for two: An alchemy of interpersonal relations]. Unpublished manuscript, University of Groningen.

Klahr, R. and Wallace, J. G. (1976). *Cognitive Development: An Information Processing View*, Wiley, New York.

Knight, G. P. and Dubro, A. F. (1984). 'Cooperative, competitive, and individualistic social values: An individualized regression and clustering approach', *Journal of Personality and Social Psychology*, **46:** 98–105.

Kramer, R., McClintock, C. G. and Messick, D. M. (1986). 'Social values and cooperative response to a simulated resource conservation crisis', *Journal of Personality*, **54:** 101–117.

Kuhlman, D. M. and Marshello, A. (1975). 'Individual differences in game motivation as moderators of preprogrammed strategy effects in prisoner's dilemma', *Journal of Personality and Social Psychology*, **32:** 922–931.

Kuhlman, D. M., Camac, C. R. and Cunha, D. A. (1986). 'Individual differences in social orientation'. In: Wilke, H., Messick, D. and Rutte, C. (Eds), *Experimental Social Dilemmas*, Peter Lang, Frankfurt am Main, pp. 151–176.

Liebrand, W. B. G. (1984). 'The effect of social motives, communication and group size on behavior in an n-person multi-stage mixed-motive game', *European Journal of Social Psychology*, **14:** 239–264.
Liebrand, W. B. G. and Van Run, G. J. (1985). 'The effect of social motives across two cultures on behavior in social dilemma's', *Journal of Experimental Social Psychology*, **21:** 86–102.
Liebrand, W. B. G., Jansen, R. W. T. L., Rijken, V. M. and Suhre, C. J. M. (1986). 'Might over morality: Social values and the perception of other players in experimental games', *Journal of Experimental Social Psychology*, **22:** 203–215.
Luce, R. D. and Raiffa, H. (1957). *Games and Decisions: Introduction and Critical Survey*, Wiley, London.
MacCrimmon, K. R. and Messick, D. M. (1976). 'A framework for social motives', *Behavioral Science*, **21:** 86–100.
Markus, H., Crane, M., Bernstein, S. and Siladi, M. (1982). 'Self-schemas and gender', *Journal of Personality and Social Psychology*, **42:** 38–50.
McClintock, C. G. (1972). 'Social motivation — A set of propositions', *Behavioral Science*, **17:** 438–454.
McClintock, C. G. (1978). 'Social values: Their definition, measurement and development', *Journal of Research and Development in Education*, **12:** 121–137.
McClintock, C. G. and Allison, S. (1986). *Social Value Orientation and Helping Behavior*. Unpublished manuscript.
McClintock, C. G. and Liebrand, W. B. G. (in press). 'The role of interdependence structure, individual value orientation and other's strategy in social decision making: A transformational analysis', *Journal of Personality and Social Psychology*.
Messick, D. M. and McClintock, C. G. (1968). 'Motivational basis of choice in experimental games', *Journal of Experimental Social Psychology*, **4:** 1–25.
Messick, D. M. and Sentis, K. P. (1985). 'Estimating social and nonsocial utility functions from ordinal data', *European Journal of Social Psychology*, **15:** 389–399.
Radzicki, J. J. (1976). 'A technique of conjoint measurement of subjective value of own and other's gains', *Polish Psychological Bulletin*, **7:** 179–186.
Schulz, U. and May, T. (1986). 'A random utility model for the evaluation of "Social Motives" by ranking methods'. In: Roskam, E. and Suck, R. (Eds), *Progress in Mathematical Psychology*, Vol. 1, North Holland, Amsterdam.

RÉSUMÉ

La personnalité peut être définie à partir d'un point de vue social comme un système plus ou moins consistant d'orientations qui influent sur les décisions et les comportements individuels en relation avec l'attribution des ressources, à soi-même et aux autres. Un des modèles les plus robustes pour la mesure des utilités interpersonnelles d'un individu est le Modèle des Valeurs Sociales (Social Values Model) de McClintock (1972). Dans la présente étude, nous évaluons le concept de *Valeur Sociale* en testant l'hypothèse que le temps de l'assimilation cognitive des sujets varie systématiquement en fonction du type de valeur sociale qui est exprimé. Le *Ring Measure of Social Values* (Liebrand, 1984) a été effectué, à cet effet, par 61 sujets masculins et 124 sujets féminins. Comme prévu, des temps de latence plus longs ont été observé chez les personnes ayant une orientation de coopération ou de compétition que chez les altruistes et les individualistes. De plus, une interaction entre Valeur Sociale et structure de gain (Structure des résultats) a été trouvée. L'explication proposée de cette interaction est que les coopératifs hésitent plus à prendre des décisions qui pourraient avoir des conséquences négatives pour les autres tandis que les compétitifs hésitent à accorder des conséquences positives aux autres. Ces résultats contribuent à fonder la validité du concept de Valeur Sociale.

ZUSAMMENFASSUNG

Von einem sozialen Standpunkt ausgehend, kann Persönlichkeit als mehr oder weniger konsistentes System von Orientierungen definiert werden, welches die Entscheidungen und Verhaltensweisen eines Individuums beeinflußt, die auf die Zuweisung von interpersonellen (Selbst vs. Fremd) Resourcen bezogen sind. Ein grundlegendes Modell für die Messung von interpersonnellen Nutzenpräferenzen oder Nutzenfunktionen eines Individuums ist das *Social Value Model (Modell des sozialen Wertes)* von McClintock (McClintock, 1972). In der vorliegenden Studie evaluieren wir das Konstrukt des *Social Value* durch die Testung der Hypothese, daß die kognitive Verarbeitungszeit von Personen systematisch als Funktion des zum Ausdruck gebrachten Typs des sozialen Wertes variiert. Dazu werden 61 männliche und 124 weibliche Probanden mit Hilfe des *Ring Measure of Social Values* (Liebrand, 1984) untersucht. Wie vorhergesagt, zeigen sich bei kooperations- und wettbewerbsorientierten Probanden längere Antwortlatenzen als bei altruistisch und individuell orientierten Versuchspersonen. Zusätzlich konnte eine Interaktion zwischen dem sozialen Wert und der Ergebnisstruktur ermittelt werden. Dieses Ergebnis wurde erklärt durch die Annahme, daß kooperativ orientierte Probanden länger zögern, eine Enscheidung zu treffen, die negative Ergebnisse für andere Teilnhemer beinhaltet, während wettbewerbsorientierte probanden anderen Teilnehmern eher widerwillig positive Ergebnisse zukommen lassen. Die vorliegenden Forschungsergebnisse können als weiterer Beleg für die Validität des Konstruktes des *Social Value* betrachtet werden.